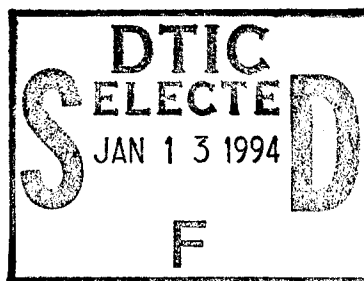


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**US Army Corps
of Engineers**

Hydrologic Engineering Center



HEC Reservoir-Database Network

Installation and User's Guide

Training Document No. 35

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HEC RESERVOIR-DATABASE NETWORK

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HEC RESERVOIR-DATABASE NETWORK

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HEC RESERVOIR-DATABASE NETWORK

Introduction

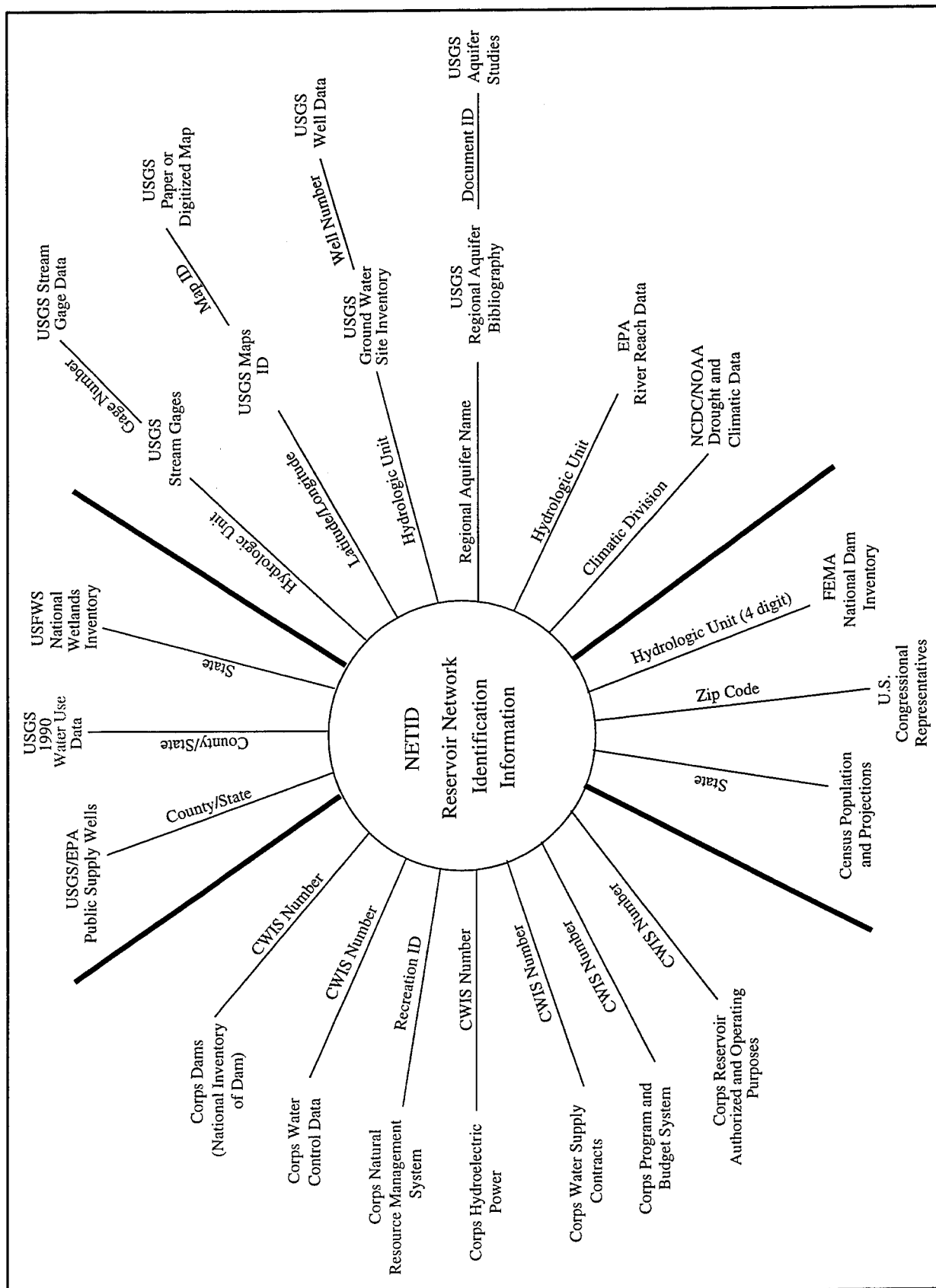
The Hydrologic Engineering Center (HEC) database network provides technical information on 542 federally-owned reservoirs operated by the Corps of Engineers. This includes information on project location, authorizing legislation, water control management, hydrologic and structural features, reservoir storage, hydroelectric power facilities, water supply contracts and project recreation. The information is detailed and comprehensive. In addition, the database network provides the links necessary to access other databases not in the network. For example, it provides, for each reservoir, the hydrologic unit number commonly used in U. S. Geological Survey databases, the FIPS (Federal Information Processing Standard) state and county code used by the U. S. Bureau of Census, and the Federal Energy Regulatory Commission identification number used for hydropower facilities. These and many other identification numbers provide the capability to link Corps reservoirs to a variety of planning and management information.

The network information is displayed in the standard reports selected from a menu. Additional reports or customs reports, can be prepared and added to the menu by the Hydrologic Engineering Center.

The Network Concept

The HEC Reservoir-Database network concept is illustrated in Figure 1. At the center, or hub, of the network is a database, NETID, that contains identifying information for all Corps of Engineers reservoirs including locks and dams. Currently there are 542 reservoirs in the database. Each reservoir has over 20 unique identifiers associated with it. These identifiers include such information as river, state, county, hydrologic unit, latitude and longitude, congressional district, zipcode and so on. Each identifier provides a key piece of information that may be used to access information in other databases and which can then be used for a variety of planning and management purposes. The concept of accessing other databases is also illustrated in Figure 1 with the spoke reaching out from the center. Without some common identifier to link the databases with the reservoirs the information in the other databases cannot be accessed.

A wide-variety of databases are continuously being developed and maintained by others. This includes not only Corps offices but other federal agencies such as the U. S. Geological Survey, the National Weather Service, state agencies and private organizations. Access to this information is important to efficient, effective and up-to-date planning and management. It is also essential to Geographic Information Systems. The information currently accessible through the network includes information about the reservoir itself, its operation, facilities, authorization, and contracts; information about the underlying groundwater aquifer and climate region; and information about Congressional representatives and districts.



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Figure 1 - HEC Reservoir-Database Network

Most databases used in the network are not maintained on an on-line, electronically accessible basis, nor is there a need to do this. Rather, the databases have been obtained by HEC from the office or agency responsible and loaded into the network.

Network Computer Program

Two forms of the network computer software are available depending upon the needs of the Corps field offices. One, HECNETR, prints standard reports of reservoir information to a screen, printer or file. These reports are organized by type of reservoir information: project list, location and identification, water control management, authorizing legislation, hydrologic features, reservoir storage, structural features, hydroelectric power, water supply contracts, and project recreation. This program will be useful to offices where the need is only for access to various types of reservoir and related information.

The other form of the program, HECNET, provides the capability to do a number of database management tasks such as import and export tables of data, query tables of data, edit data, and print reports (identical to the reports in HECNETR). This form of the program will be useful to those who wish to have greater access to the data in the network, who wish to bring additional data into the network on their own, and who have some database management skills. While the HECNET program was developed with Corps of Engineers reservoirs in mind it is also general purpose in that it can be used with other databases for other purposes. Both forms of the network program are menu driven.

The HEC Database Network uses **R:Base, Version 4.0** and **Runtime, Version 4.0** database software developed by Microrim Inc., Bellevue, Washington. **Runtime** is an executable version of the database software that provides easy distribution of database applications for those that do not have **R:Base**. The Hydrologic Engineering Center has a licensing agreement with Microrim Inc. for unlimited distribution of **Runtime** applications. The installation of the database network and a **Runtime** application are described in Appendix A.

Databases Used

The databases currently in the network and used for the standard reports come from a variety of sources. These are briefly described below and in more detail in Appendix D - Catalog of Databases Used.

- . Reservoir Network Identification Information (NETID)
This database contains location and identification information to enable Corps reservoirs to be linked with other databases. It has been developed and is maintained by the Hydrologic Engineering Center (CEWRC-HEC).
- . Water Control Data (NEWPERT)
Originally developed by the Hydraulics and Hydrology Branch, Headquarters (CECW-EH) from a survey of district offices this database contains hydrologic data about floods, runoff, water control and reservoir storage.
- . Authorized and Operating Purposes of Corps of Engineer Reservoirs (LEGAUTH)
This database was created in response to Section 311 of the Water Resources Development Act of 1990 which requested the operating and authorized purposes of Corps of Engineers reservoirs. It contains the authorizing public laws, referenced House and Senate documents and excerpts from the authorizing legislation. It was developed and is maintained by the Hydrologic Engineering Center.
- . National Inventory of Dams - Corps of Engineers Dams (COEDAM)
COEDAM is a subset, with later additions, of the National Inventory of Dams database (1982) and contains only dams of the Corps of Engineers. The data describes the structural, hydrologic and other physical features of the dam and reservoir. The database is maintained in Headquarters.
- . Hydroelectric Power at Corps of Engineers Projects (CEHYDRO)
The Institute for Water Resources (CEWRC-IWR) developed and maintains this database of information on hydroelectric power facilities operated at Corps of Engineers reservoirs.
- . Natural Resources Management System (NRMS)
This system contains a number of databases that define recreational facilities and visitation at Corps of Engineers projects including reservoirs. The system is maintained in Headquarters, Operation Division.
- . Water Supply Contracts (WSCONT)
Responsibility for this database of water supply contract information at Corps reservoirs resides in the Planning Division, Headquarters. Ted

Hillier at the Institute for Water Resources is developing a questionnaire to district offices requesting updated and additional information on water supply contracts.

Data Accuracy

Not all of the data in the databases described above are correct and current. There are many reasons for this. First and foremost is that the data is often not carefully checked and updated when it is originally obtained. Because most data originates from field questionnaires the assumption is usually made that what is on the questionnaire is accurate. This is too often not the case. Sometimes the person completing the questionnaire does not have the correct information and is not careful to double check the data available. Occasionally, previously published sources are not correct or not current and their use repeats the error. There are times when the questionnaire is not clear as to the data desired and it is misinterpreted. Lastly, some databases once created are not updated and maintained because an ongoing responsibility is not assigned. What all this points to is the need to use the data with caution - at least until proper data management is organized. Some spot checking is always desirable in addition to talking with the person responsible for the database.

In the HEC Database Network all of the data in the Reservoir Network Identification Information and Authorized and Operating Purposes of Corps of Engineers Reservoirs databases have been carefully checked and rechecked and are believed to be accurate and current. While data in the other databases are available through the network the accuracy of this data is the responsibility of the organization that developed it.

Standard Reservoir Reports (HECNETR)

Ten standard reports have been developed to display reservoir information. These reports display some, but not all, of the data available in the network. Each report may be displayed on the screen, printed to a printer or to a file. Additional reports using any of the information in the database can be prepared by the Hydrologic Engineering Center to meet the specific needs of a user. Examples of the standard reports are shown in Appendix B and a data dictionary of variables to sort or limit the reports is provided in Appendix C.

Standard reports available are:

- . Project List

Sometimes it is desired to list all the projects in a particular region, division or district and this is the purpose of Project List. It provides only the name of the project and a few basic identifiers.

- . Location and Identification

This report contains information that locates the reservoir geographically and identifies it by various codes.

- . **Water Control Management**
The status of various water control reports, the names of the responsible water control managers at the district and division levels and other management information is provided.
- . **Authorizing Legislation**
Information on the public laws authorizing each project purpose, identification of reference documents where they are cited in the public law, and excerpts from the laws or documents are provided.
- . **Hydrologic Features**
This report contains a variety of information on runoff, floods, and hydrologic features controlling floods.
- . **Reservoir Storage**
A profile of the reservoir storage including active, inactive, dead and surcharge storage is provided.
- . **Structural Features**
This report includes information on the type of dam, dimensions, construction history, potential hazards and date of last inspection.
- . **Hydroelectric Power**
Reservoirs which have hydroelectric power generating facilities, either Corps operated or non-Corps under a FERC license, have the licensing information and the capacity and energy displayed.
- . **Water Supply Contracts**
Reservoirs which have water supply contracts have the contract information displayed. This includes the contractor, contract date, present and future storage and dollar investment.
- . **Project Recreation**
This report displays, for reservoirs with recreational facilities, the nearby population centers, the amount of each type of recreation and the monthly and annual of visitation.

Printing Standard Reports

The steps for printing a standard report are described below.

Start the Database Network

1. Go to the network directory (e.g. C:\HECNETR). Appendix A provides instructions on the installation of the network.
2. Enter RES to run the program.

3. The first two screens display a logo and foreword for the program and some guidance for using the reports menu.

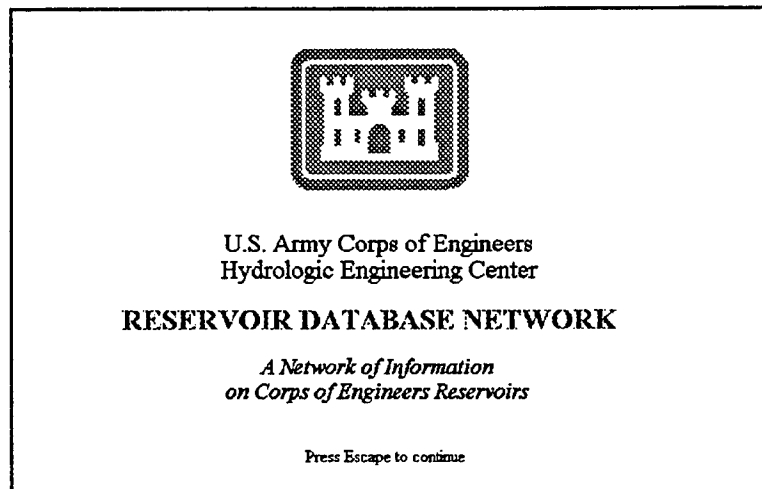


Figure 2 - Title Screen

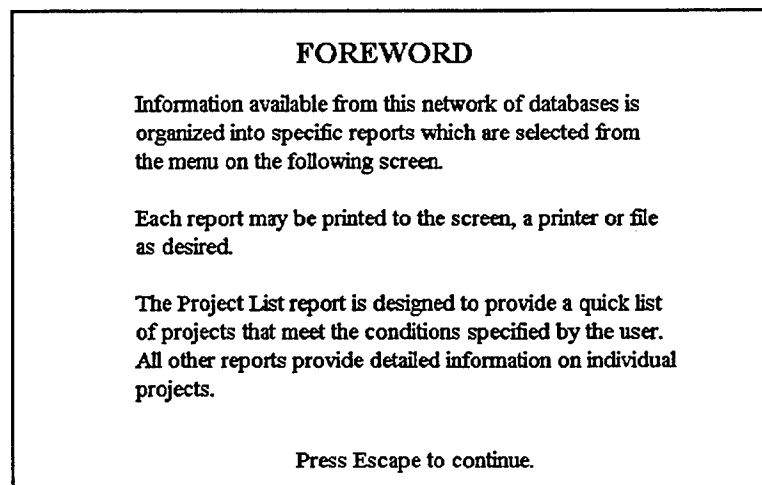


Figure 3 - Foreword Screen

Select a Report Category

Select standard reports to display a list of ten standard reports, other reports to select a list of user developed reports (the standard reports are included in this list), or exit to leave the menu.

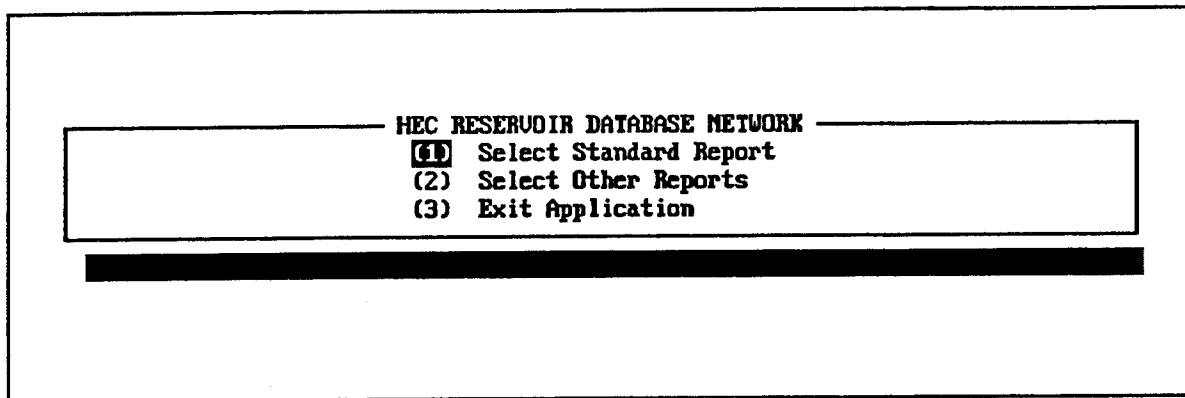


Figure 4 - Reports Selection

Select a Standard Report

Use the up and down arrow keys to select from the standard reports menu. Press enter to select a report.

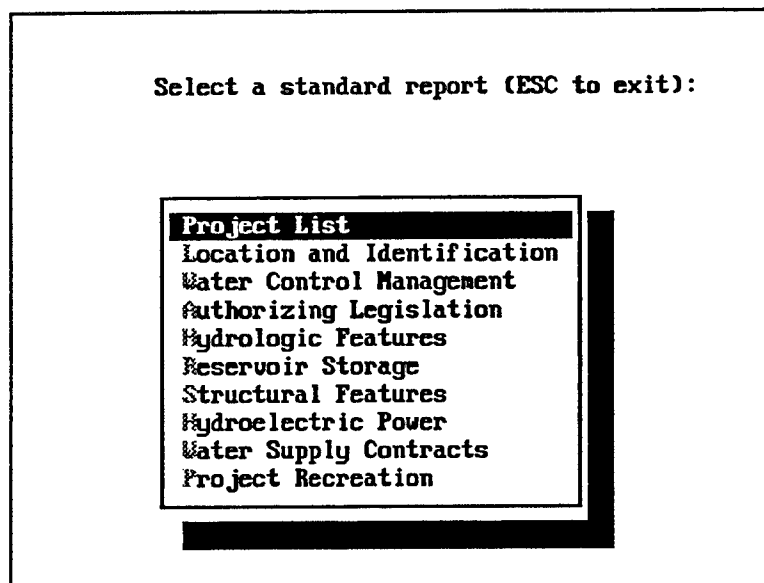


Figure 5 - Standard Reports Menu

Do you want to sort or limit the reports generated?

Yes - A yes response will most always be used to limit the number of reservoirs for which a report is generated.

No - There are 542 reservoirs currently in the database. A No response will generate a report for each reservoir. You probably don't want this and you probably won't get it before retirement.

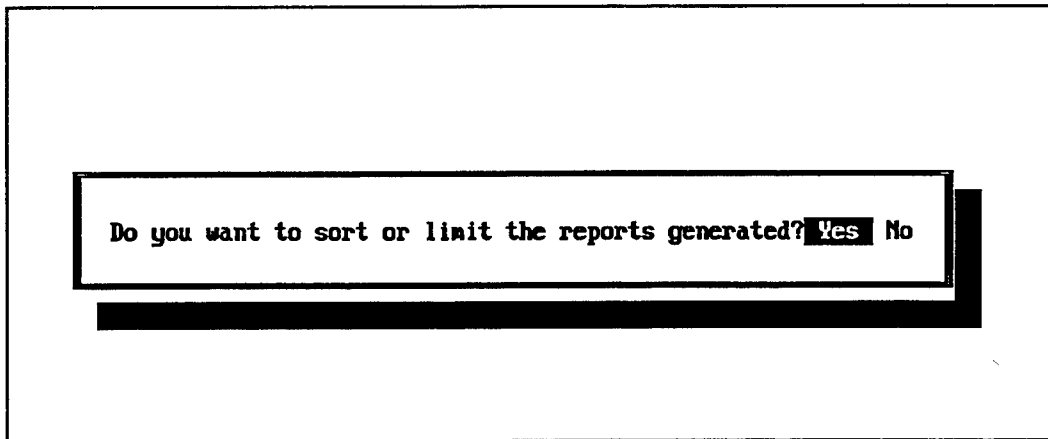


Figure 6 - Select Sort or Limit

Specify the order of the reports or press ESC for no sort.

If only one reservoir is being requested then there is no need to sort, use ESC. An example of using the sort is with the Project List report where many reservoirs are printed. Some of the commonly used sort parameters which may be selected include:

DV - orders the Divisions selected in alphabetical ascending or descending order.

DS - orders the Districts selected in alphabetical ascending or descending order.

RESNAME - orders the projects by reservoir name in alphabetical ascending or descending order.

STATE1 - orders states in alphabetical ascending or descending order.

STATE1 AND RESNAME - orders by state and within each state alphabetical by reservoir name.

Specify the order of the reports or press ESC for no sort

Press F2 to accept specified sorting order

CUIS
NIDID
RECID
DU
DS
RESNAME
RIVER
COUNTY1
STATE1

Choose a column.
Database: RESID

TYPE: TEXT 9

Figure 7 - Specify Sort

Specify a limit on the reports generated?

You will almost always want to limit your reports in some way. Here are some examples. Additional examples are included in the Dictionary of Variables Commonly Used to Sort and Limit Reports, Appendix C. Commands may be typed in either upper or lower case letters.

RESNAME CONTAINS 'LIBBY'
 RESNAME = 'LIBBY DAM - LAKE KOOCANUSA'
 (Note: If you use the equal sign the name must be exact.)
 LATDEG > '330000' AND LATDEG < '340000'
 YEARCMLPL >= '1970'
 DV = 'SPD' AND DS <> 'SPK'

Specify a limit on the reports generated? **Yes** No

Figure 8 - Specify a Limit

LIMITING CONDITION:

Select limit

CWIS
MIDID
RECID
BU
BS
RESNAME
RIVER
COUNTY1
STATE1
COUNTY2

Choose a column.
Database: RESID

TYPE: TEXT 9

Figure 9 - Select Limiting Condition

LIMITING CONDITION:
RESNAME CONTAINS 'LIBBY'

Specify another condition or press (Done) to complete the limit

(DONE)
OR
AND
OR NOT
AND NOT

CONJUNCTION MENU
Database: RESID

Figure 10 - Limiting Condition

Specify another condition or press ESC to complete the limit?

Examples of multiple conditions with connecting operators are,

STATE1 = 'CALIFORNIA' OR STATE1 = 'ARIZONA'
DV = 'SPD' AND STATE1 = 'ARIZONA'

Generate Report?

Yes - Gives three options for printing the report: to the screen, to a printer, or to a file.

No - Allows you to void all of the instructions and start over.

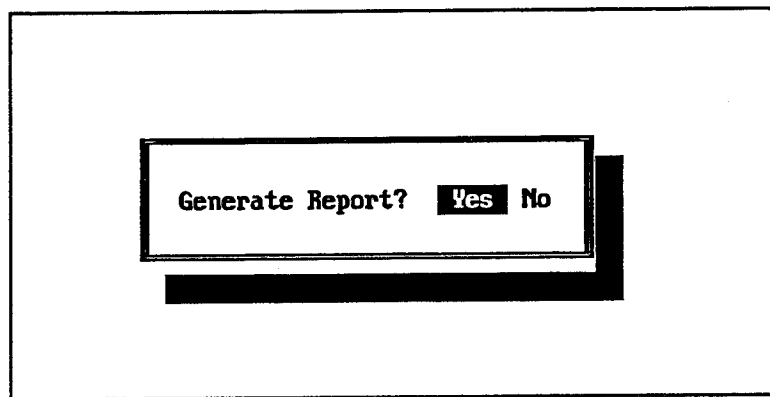


Figure 11 - Generate Report Option

Report Menu

Tag the option desired, press Enter, press F2.

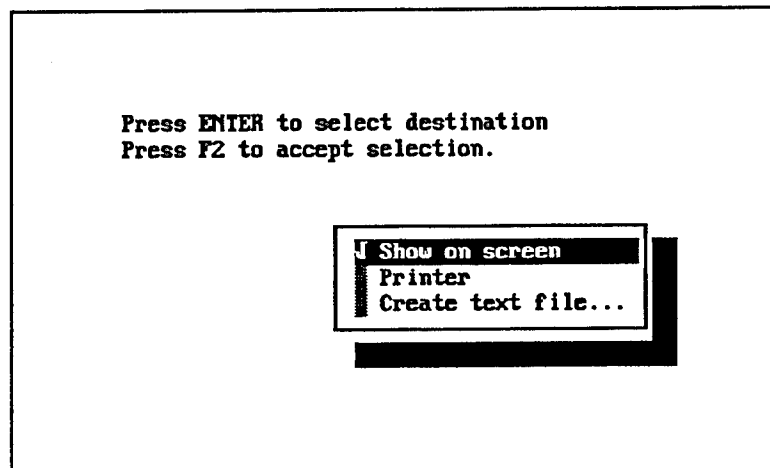


Figure 12 - Print Routing

Save Report to a File?

Sometimes after viewing the report on the screen you may wish to save it as a file, for example, to edit in a word processor. Specify the path and file name e.g. C:\TEMP\RESLIST.RPT.

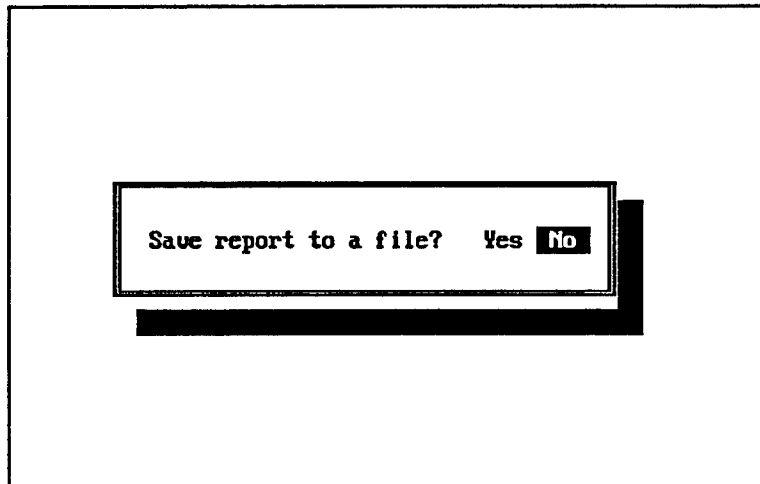


Figure 13 - Save Report to a File

Print Report?

Again, after viewing the report on the screen you may decide to print it. This provides that opportunity.

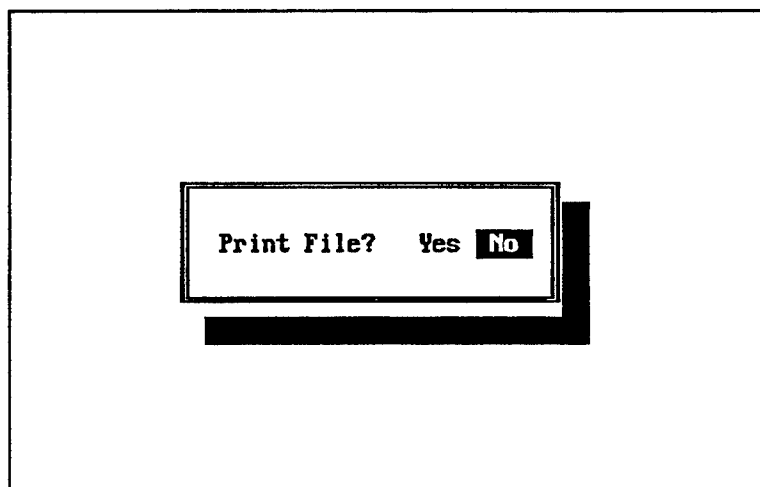


Figure 14 - Print File

Reservoir Network (HECNET)

The main menu for the second form of the database network is shown in Figure 15 and an explanation of each menu item follows. To get this menu, enter RTIME in the HECNET directory. As mentioned previously, this form of the network program provides additional database management capability for those who need that capability and have the skill to use it.

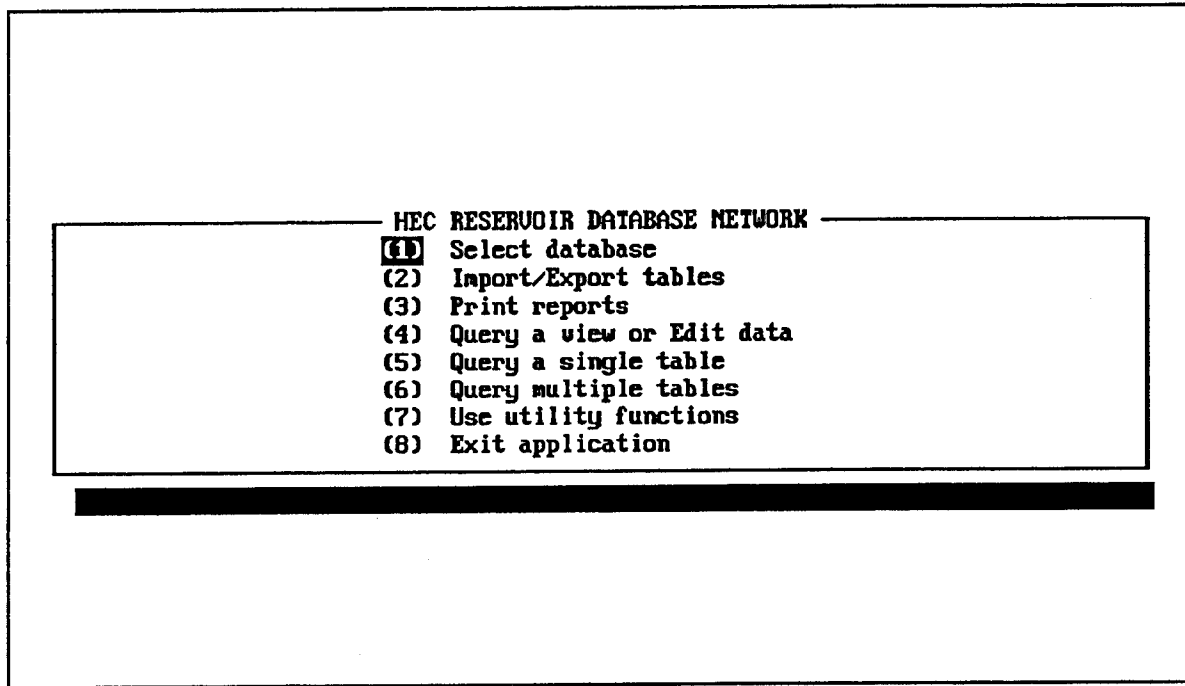


Figure 15 - Network Main Menu

(1) *Select database.* Select the database desired from this menu. The network database is RESID. All databases mentioned in the preceding section are included in RESID and are identified as tables. Other databases may be accessed by the program and these are listed on the menu when they are placed in the program directory.

(2) *Import/Export tables.* This option provides the user with the capability to easily import other databases into the network.

(1) *List tables.* This option lists the tables in the current database for reference.

(2) *Load an external R:Base table.* Tables in other R:Base databases can be imported into the network database (RESID) using this option. Both Structure and Data are imported. See item (3) below for the Unload option.

(3) *Unload a table.* Tables in the network database, or other R:Base databases, can be exported to a file using this option. Exported tables may include Structure, Data or both Structure and Data (All).

(4) *Delete a table or detach a DBF file.* Tables can be removed from the network, or other selected database, using this option. DBF files are DBASE databases which can be attached to the selected database as a table. When they are no longer needed they can be detached.

(5) *Attach a DBF file.* The easiest way to use a DBASE database in the program is to attach it to the network. Then it becomes a table. As an attached table it can be used for reports and other purposes.

(6) *Import/Export file using GATEWAY.* GATEWAY is a program option that allows the user to import into the network database LOTUS or other spreadsheet data, ASCII fixed or delimited field data, and other data. This option provides the capability to bring in data from a wide-variety of sources.

(7) *Create a new table.* This option provides the capability to enter data directly into a new table in the network database. The user names the table and specifies the columns and the type of data they will contain.

(8) *Return to main menu.* This option returns the user to the main menu.

(3) *Print Reports.* The reports menu is the same as discussed previously under the HECNETR form of the program. There are two categories of reports: standard reports and other reports. As discussed the standard reports are predefined and cover the major types of reservoir information. The other category contains all other reports prepared for the network. Reports may be printed to the screen, to a printer, or to a file. The user selects the report and the conditions, for example, which reservoirs are desired.

(4) *Query a View or Edit Data.* This option provides two capabilities. First, it allows the user to query a view which has been created using a separate option. A view is a collection of columns drawn from up to five existing tables or views. Thus, with a view, combinations of columns can be linked together. Views are created under option (6) Query multiple tables. The second capability this menu option brings is that of editing existing data or entering new data into a table.

(5) *Query a single table.* A single table is selected and the structure can be listed, the entire table browsed or edited or just selected fields and rows browsed or edited. The SQL query gives the user the capability to query the table using the SQL language.

(6) *Query multiple tables.* All or part of the contents of up to five tables in the network database can be combined. Once combined, the user can save the query as a View. A View is a temporary table that stores no data. When a View is executed, data are collected from the source table or tables.

(1) *List table structure.* This option lists the structure of the tables in the network database for easy reference.

(2) *Simple multiple table query.* When the user has two to five tables to link together by a **single common column** this option is used. Sub-menus take the user through the linking process.

Select primary table. Choose from the list of tables in the network database the primary table to be used.

Construct a where clause. The data from the primary table can be limited, for example only those reservoirs in a selected state or division, by choosing (Yes). If all the table data is desired select (No).

Select linking column. Select the column from the primary table that will be used to link all tables.

Select columns in primary table to be included. The user has the choice of selecting the columns to be used with the other tables.

Select columns in primary table to sort by. For example, the data can be sorted by division and district office. When the sort option is selected the final display of data will be in this form.

Select secondary table. Additional tables (up to four) may be selected and linked to the primary table. The menu options follow the same sequence as for the primary table. The linking column is the same as that designated for the primary table.

Construct a View based on this query? Select (Yes) to save the combined tables as a View. It is not necessary to re-combine the tables in the future. Current data from each table is used. Select (No) if the combination of tables is not to be saved.

(7) *Use utility functions.* Only one utility function is currently in this menu item - View any file. This function allows the user to look at any file in any directory.

(8) *Exit application.* This option exits the network program and goes to the R>. To exit from the R>, type EXIT.

Future Developments

There is the continuing need to check the accuracy of some of the databases tied to the network as well as any new data. This is a time consuming, tedious but very necessary task if the network is going to contain credible data and the capability of the network is to be extended. There is a continuing need to identify new databases, new data, and the links

between Corps of Engineers reservoirs and the data that may be useful in planning and management.

There is also the need to make the software used to access the network more current. The program was developed prior to Windows and Visual Basic software becoming readily available so there is a need to update the software to take advantage of current technology. This will make the program more user friendly and expand its flexibility. It will also make it consistent with the direction of some of HEC's recent programs.

A third area of development is to expand the display capability of the network. This could include graphics, pie, line, bar graphs of data in the database; the display of sketches (e.g. from construction plans) and pictures (e.g. aerial photos) of reservoir features; quad maps available from the USGS; and the capability to mix and match data for one or a system of reservoirs.

APPENDIX A

Installation of HEC Database Network

Installation of HEC Database Network

The HEC Database Network computer software was developed using Microrim's database program **R:Base**. An executable version is provided for users who do not have **R:Base**. This program is called **Runtime**. The instructions below describe the installation of the **Runtime** program and the HEC Database Network application.

Install Runtime Program Files (Version 4.0)

The **R:Base Runtime** files are contained on two diskettes, System Disk 1 and 2. The program has its own **INSTALL** procedure.

1. Insert System Disk 1 in drive A:
2. Specify drive A at the C prompt, **C>A:**, and Press Enter.
3. Type **INSTALL**, **A:>INSTALL**, and Press Enter.
4. The first five screens are informational, after each screen press any key to continue.

When asked, install only **Runtime 4.0**.

Runtime suggests a directory **C:>\RTIME** for the files. Change this to **C:>\HECNETR**.

5. Press Enter (**YES**) to change the **AUTOEXEC.BAT** and **CONFIG.SYS** files.

Install Application Files (Developed with R:Base Version 4.0)

There are two application files **HECNETR.ZIP** and **PKUNZIP.EXE**. Copy these two files into the **HECNETR** directory and unzip the **HECNETR.ZIP** file. About 3.8 MB of disk storage is required. The following steps do this.

1. Copy the **HECNETR.ZIP** and **PKUNZIP.EXE** into the application directory e.g.
C:\HECNETR>COPY A:*.*
2. In the application directory unzip the **HECNETR.ZIP** file using the command
C:\HECNETR>PKUNZIP HECNETR.ZIP

Starting the Database Network

1. Initialize your **AUTOEXEC.BAT** file by entering **C:>AUTOEXEC** or by turning off your computer and re-booting.
2. Go to the network directory e.g. **C:\HECNETR>**
3. Enter **RES** e.g. **C:\HECNETR>RES**.
If you wish to by-pass the logo and foreword screens enter **RTIME** instead of **RES**.

APPENDIX B

Example Standard Reservoir Reports

HEC DATABASE NETWORK TABLES AND VIEWS USED IN STANDARD REPORTS

<u>Report Title</u>	<u>Report Name</u>	<u>View Used</u>	<u>Table Used</u>
Project List	PLIST		NETID
Location and Identification	LOCID		NETID
Water Control Management	WATCON	VNETAUTHPERT	
Authorizing Legislation	S311A		NETID
	S311B		AUTHPUR
	S311C		NOTES
	S311D		AUTHPUR
	S311E		AUTHPUR
	S311F		PUBLAW, LAWLIST
Hydrologic Features	HYDRO	VNETPERT	
Reservoir Storage	STORAGE	VNETPERT	
Structural Features	STRUCT	VNETRBCOE	
Hydroelectric Power	HPOWER	VNETCEHYDRO	
Water Supply Contracts	WATSUP	VNETWS	
Project Recreation	RECREA	VNETPR_USE	PR_USE.DBF MSA.DBF

RESERVOIR INFORMATION REPORT

Project List

CWIS No.	Div Dist	Reservoir Name	River
00930	SWD SWF	BARDWELL LAKE	Waxahachie Creek
01330	SWD SWF	BELTON LAKE	Leon River
01350	SWD SWF	BENBROOK LAKE	Clear Fork of the Trinity River
02590	SWD SWF	CANYON LAKE	Guadalupe River
05850	SWD SWF	FERRELL'S BRIDGE DAM - LAKE O' THE PINES	Big Cypress Creek
06760	SWD SWF	GRAPEVINE LAKE	Denton Creek
07710	SWD SWF	HORDS CREEK LAKE	Hords Creek
09420	SWD SWF	JOE POOL LAKE	Mountain Creek
09580	SWD SWF	LAVON LAKE	East Fork of the Trinity River
09740	SWD SWF	LEWISVILLE LAKE	Elm Fork of the Trinty River
12260	SWD SWF	NAVARRO MILLS LAKE	Richland Creek
14580	SWD SWF	PROCTOR LAKE	Leon River
16040	SWD SWF	SAM RAYBURN DAM AND RESERVOIR	Angelina River
16090	SWD SWF	O. C. FISHER DAM AND LAKE	North Concho River
17110	SWD SWF	SOMERVILLE LAKE	Yegua Creek
17530	SWD SWF	STILLHOUSE HOLLOW LAKE	Lampasas River
18110	SWD SWF	WRIGHT PATMAN DAM AND LAKE	Sulphur River
19250	SWD SWF	WACO LAKE	Bosque River
19920	SWD SWF	WHITNEY LAKE	Brazos River
74786	SWD SWF	AQUILLA LAKE	Aquilla Creek
74787	SWD SWF	RAY ROBERTS LAKE	Elm Fork of the Trinity River
79053	SWD SWF	TOWN BLUFF DAM - B.A. STEINHAGEN LAKE	Neches River
75357	SWD SWF	GRANGER DAM AND LAKE	San Gabriel River
75358	SWD SWF	NORTH SAN GABRIEL DAM - GEORGETOWN LAKE	North Fork of the San Gabriel River
02160-01	SWD SWG	ADDICKS DAM	South Mayde Creek, Tributary of Buffalo Bayou
02160-02	SWD SWG	BARKER DAM	Buffalo Bayou
13700	SWD SWT	PAT MAYSE LAKE	Sanders Creek
74945	SWD SWT	DENISON DAM - LAKE TEXOMA	Red River
03820	SWD SWF	COOPER LAKE	South Sulphur River

RESERVOIR INFORMATION REPORT

Location and Identification

WRIGHT PATMAN DAM AND LAKE
Sulphur River

CWIS NO. 18110

Corps Identification

Southwestern Division

Fort Worth District

Civil Works Information System (CWIS) No.: 18110

National Inventory of Dams No.: TX00021

Corps Recreation ID: M218110

Geographic Identification

Bowie and Cass Counties, Texas

Nearby City: TEXARKANA

Latitude: 331818. Longitude: 940936.

Latitude (Decimal): 33.305 Longitude (Decimal): 94.16

UTM Zone: 15 UTM Easting: 392006.6661 UTM Northing: 3685521.972

Hydrologic Identification

USGS Hydrologic Unit: 11140302

NOAA Climate Division: EAST TEXAS

NOAA Climate Division No.: 4104

USGS Regional Aquifer: EDWARDS-TRINITY AQUIFERS

Demographic Identification

Census FIPS State No. 48

Census FIPS County No. 037

Congressional District

Texas

District 01

RESERVOIR INFORMATION REPORT

Water Control Management

WRIGHT PATMAN DAM AND LAKE
Sulphur River
Bowie and Cass Counties Texas

CWIS No. 18110

Water Control Purposes

Authorized Purposes: WS, R, FC,

Operating Purposes: WS, FC,

Water Supply Under Contract (a-f): 14560.

Water Control Reports and Date Completed

Water Control Manual: 11/01/74

Water Control Plan:

Drought Contingency Plan: 07/01/89

Flood Emergency Action Plan:

Water Control Managers

Southwestern Division

Loren W. Pope CESWD-ED-W

Ralph Garland CESWD-ED-WR

FAX: 214-767-2380

Tel: 214-767-2385

214-767-2388

Fort Worth District

Jimmy D. Baggett CESWF-ED-H

Vacant CESWF-ED-HL

FAX: 817-334-2176

Tel: 817-334-2054

817-334-3493

Congressional Representatives

Senate

Phil Gramm (R-Tex.)

Kay Bailey Hutchison (R-Tex.)

House

Jim Chapman (D-Tex., 1st)

RESERVOIR INFORMATION REPORT

Authorizing Legislation

WRIGHT PATMAN DAM AND LAKE

CWIS = 18110

Sulphur River

Bowie and Cass Counties, Texas

Southwestern Division

Fort Worth District

Operating Purposes	Authorized Purposes	Authorizing Laws
-----	-----	-----
Water Supply	Water Supply	PL 84-218
Flood Control	Flood Control	PL 79-526, PL 84-218
	Recreation	PL 78-534

1. Under the conservation storage contract between the Federal Government and the city of Texarkana, Texas, the Government shall have the right to withdraw water at a rate of 10 cfs for the maintenance of minimum flow in the Sulphur River below Wright Patman Dam.

2. Access and facilities are provided for recreation but water is not controlled for that purpose.

REFERENCED DOCUMENTS:

Authorizing Laws	Section of Law	Documents Referenced
-----	-----	-----
PL 84-218	1	HD 83-488
PL 79-526, PL 84-218	10, 1	HD 79-602, HD 83-488
PL 78-534	4	

DOCUMENT EXCERPT:

Purpose	Excerpt
-----	-----
Water Supply	HD 83-488 Texarkana Reservoir [Wright Patman Dam and Lake] as proposed would reduce its flood-control capacity from 2,509,000 acre-feet to 2,389,000 acre-feet and increase its conservation storage from 145,300 acre-feet to 265,300 acre-feet.
Flood Control	HD 79-602 The plan provides for construction of single-purpose flood control reservoirs at sites designated..."Texarkana" on Sulphur River. HD 83-488 Texarkana Reservoir [Wright Patman Dam and Lake] as proposed would reduce its flood-control capacity from 2,509,000 acre-feet to 2,389,000 acre-feet and increase its conservation storage from 145,300 acre-feet to

265,300 acre feet.
General Authorization

Recreation

PUBLIC LAWS CITED:

Public Law	Date	Statute	Common Name
PL 84-218	08/03/55	69 Stat 449	Red River Basin
PL 79-526	07/24/46	60 Stat 641	Flood Control Act of 1946
PL 78-534	12/22/44	58 Stat 887	Flood Control Act of 1944

RESERVOIR INFORMATION REPORT

Hydrologic Features

WRIGHT PATMAN DAM AND LAKE
Bowie and Cass Counties Texas

CWIS No. 18110

Runoff

Gross Drainage Area (sq.mi.):	3400
Local Drainage Area (sq.mi.):	2921
Average Annual Runoff (1000 a-f):	2187.
Percent Annual Runoff (%):	27.4
Annual Precipitation (inches):	44.
Annual Evaporation (inches):	42

Regulation

Top of Dam Elevation (ft.):	286.
Hydraulic Head (ft.):	19.5
Regulated Outlet Capacity (1000 cfs):	27.6
Spillway Capacity (1000 cfs):	63
No. Spillway Gates:	0
100-Year Flood (1000 cfs):	951.
Spillway Design Flood (1000 cfs):	478.6
Probable Maximum Flood (1000 cfs):	0.
Max. Design Water Surface Elev. (ft.):	278.9

Hydroelectric Power Generation

Number of Generating Units:	0
Capacity (MW):	0.
Lower Tailwater Elevation (ft. NGVD):	187.5
Upper Tailwater Elevation (ft. NGVD):	217.

RESERVOIR INFORMATION REPORT

Reservoir Storage

WRIGHT PATMAN DAM AND LAKE
Bowie and Cass Counties Texas

CWIS No. 18110

Total Active Storage (1000 a-f): 2510.5
Inactive Storage (1000 a-f): 140.6
Dead Storage (1000 a-f): 2.6
Surcharge Storage (1000 a-f): 3076.6
Total Reservoir Storage (1000 a-f): 5730.3

Type Storage	Storage (1000 a-f)	Elevation		Lake Area	
		upper	lower	upper	lower
Flood Control	2496.	259.5	220.6	119700	21300
Conservation	14.5	220.6	219.9	21300	20300

RESERVOIR INFORMATION REPORT

Structural Features

WRIGHT PATMAN DAM AND LAKE
Sulphur River
Bowie and Cass Counties Texas

CWIS No. 18110

Dam Inspection

Date of Last Inspection: 10/01/91
Date of Next Inspection: 10/01/96

Dam Type

Type of Construction: Earth
Volume of Dam (cu yds): 7370000
Dam Classification:
Number of Locks: 0
Status: Corps-built dam being managed by the Corps.

Structural Features

Structural Height (ft): 106
Hydraulic Height (ft): 101
Maximum Capacity (a-f): 5730800
Crest Length (ft): 18640
Spillway Type: Uncontrolled
Spillway Width (ft): 200
Spillway Discharge (cfs): 63200
Length of Locks (ft): 0
Width of Locks (ft): 0

Potential Hazards

Seismic Zone: 1 Seismic Damage Potential: Minor
Downstream Hazard: Loss of Life,
Economic Loss,

Dam Construction

Year Complete: 1957
Cost of Completed Project (\$): 0.
Engineering Organization: DAEN LMV
Construction Organization: DAEN LMN

RESERVOIR INFORMATION REPORT

Hydroelectric Power

MILLWOOD LAKE

CWIS No. 11240

Little River

Arkansas Hempstead and Little River Counties

Identification

Electric Reliability Council Region: SWPP

National Hydropower Study ID: ARCSWT0007

National Inventory of Dams No.: AR00536

Project Status

Year Dam Complete: 1966

Status of Existing or Potential Hydropower: Project in Operation

FERC Licensing

FERC Project ID No.: P-3435

FERC License Applicant: CITY OF HOPE, AR

Filing Date for FERC License: 01/26/83

Date FERC License Issued: 05/24/84

Date License Application Expires: 05/24/87

Capacity and Energy

Project Power Head (ft): 23

Existing Capacity (kW):

Existing Annual Energy (MWH):

Additional Capacity at Project (kW):

Additional Annual Energy Available (MWH):

Reversible Capacity (kW):

Capacity Under Construction (kW):

Comments: License expired.

RESERVOIR INFORMATION REPORT

Water Supply Contracts

DRY CREEK (WARM SPRINGS) LAKE AND CHANNEL

CWIS No. 04990

Dry Creek

Sonoma County California

Contractor: Sonoma Co. Water Agency

Present Storage (a-f): 44000.

Future Storage (a-f): 124000.

Present Investment (\$1000, varying prices): 4145.

Future Investment (\$1000, varying prices): 88335.9

Conduit Cost (\$1000, varying prices): 0.

Date Contract Approved:

Contractor: Sonoma Co. Water Agency

Present Storage (a-f): 44000.

Future Storage (a-f): 88000.

Present Investment (\$1000, varying prices): 4145.

Future Investment (\$1000, varying prices): 8289.

Conduit Cost (\$1000, varying prices): 0.

Date Contract Approved:

RESERVOIR INFORMATION REPORT

Project Recreation

WRIGHT PATMAN DAM AND LAKE
Sulphur River
Bowie and Cass Counties Texas

CWIS NO.: 18110
REC ID: M218110

Population Centers

Metropolitan Statistical Area (MSA): 8360
City Name: TEXARKANA TX-AR
Road Miles, Project to MSA: 0
Metropolitan Population: 118494

Type of Recreation (Percent of Use)

Picknicking (%)	13
Camping (%)	7
Swimming (%)	25
Water Skiing (%)	15
Boating (%)	30
Sightseeing (%)	20
Fishing (%)	32
Hunting (%)	5
Others (%)	2

Visitation

Total Number of Visitors: 1676700
Total Visitor-Hours of Use: 15247400.
Winter Recreation (% of Use): 0
Monthly Visitation (Visitor-Hours)
October: 968700
November: 1059500
December: 892100
January: 830600
February: 928800
March: 1493100
April: 1666800
May: 2637200
June: 1505700
July: 1401400
August: 1120600
September: 742900

APPENDIX C

Dictionary of Variables Available to Sort and Limit Reports

Dictionary of Variables Available to Sort and Limit Reports

All reports may be sorted and limited using the fields in the Reservoir Network Identification database (NETID) although some fields are more useful than others. An examples of each field is presented below. In addition, some reports give the user additional fields from other databases (Appendix D).

CWIS

The Civil Works Information System identification number that is unique for each reservoir.

Example: CWIS = '04990'

NIDID

The National Inventory of Dams identification number that is unique for each reservoir.

Example: NIDID = 'MT00652'

RECID

A Corps of Engineers identification number that is assigned to each project with recreation activities.

Example: RECID = 'G309750'

DV

The three letter office symbol for Corps Division offices.

Example: DV = 'SPD'

DS

The three letter office symbol for Corps District offices.

Example: DS = 'SPK'

RESNAME

The official project name. Because it is often difficult to remember the exact name, an alternative approach is to specify a keyword and the CONTAINS clause.

Example: RESNAME = 'LIBBY DAM - LAKE KOOCANUSA'

OR

Example: RESNAME CONTAINS 'LIBBY'

RIVER

The name of the river on which the reservoir is located.

Example: RIVER = 'Kootenai River'

OR

Example: RIVER CONTAINS 'Kootenai'

COUNTY1

The primary county or counties in which the reservoir is located. Because a county's name is often found in several states it is a good idea to specify the state also.

Example: COUNTY1 = 'Lincoln County' AND STATE1 = 'Montana'
OR

Example: COUNTY1 CONTAINS 'Lincoln' AND STATE1 = 'Montana'

STATE1

The primary state in which the reservoir is located.

Example: STATE1 = 'Montana'

COUNTY2

The secondary county in which the reservoir is located.

Example: COUNTY1 CONTAINS 'Lincoln' AND STATE1 = 'Nebraska'

STATE2

The secondary state in which the reservoir is located.

Example: STATE2 = 'Nebraska'

ST1_LTRS

Two-letter postal state code.

Example: ST1_LTRS = 'ca'

FIPS_ST

Two-digit state FIPS code.

Example: FIPS_St = '13' (13 is the FIPS state code for Georgia)

FIPS_CO

Three digit county FIPS code.

Example: FIPS_CO = '121' (121 is the FIPS county code for Fulton County, Georgia)

FIPS

Five-digit state and county FIPS code.

Example: FIPS = '13121' (Fulton County, Georgia)

ZIPCODE

Five-digit national postal zip code.

Example: ZIPCODE CONTAINS '956'

LATITUDE AND LONGITUDE

Latitude and longitude are available in degrees, minutes, seconds (LATDEG, LONGDEG) or as a decimal (DECLAT, DECLONG).

Example: LATDEG > '330000' AND LATDEG < '340000'

UTM coordinates (UTMZONE, UTMEAST, UTMNORTH) are also available to locate projects.

YEARCMPL

Year when reservoir construction was complete.

Example: YEARCMPL GE '1980'

AQUIFER

Two-digit USGS Regional Aquifer System number.

Example: AQUIFER EQ '01' (01 is the aquifer number for the Northern Great Plains).

HYDUNIT

Eight-digit USGS hydrologic unit number.

Example: HYDUNIT EQ '11140302' (Wright Patman Dam and Lake lies within this USGS hydrologic unit).

CLIMDIV

Four-digit NOAA Climate Division number.

Example: CLIMDIV = '4104' (This is NOAA climate division 04 (East Texas) for Texas (41)).

CDIVNAME

This is the NOAA climate division name.

Example: CDIVNAME = 'East Texas'

NEARCITY

A nearby town or city to the reservoir.

Example: NEARCITY EQ 'TEXARKANA'

CONGRESSIONAL DISTRICT

A reservoir (dam or lake) may be located in more than one state, county or Congressional District. The Congressional District must be specified with a state and up to five districts may be specified.

Example: CNGDST1 EQ '01' AND ST1_LTRS EQ 'TX'

Examples of Multiple Conditions for Sorting and Limiting Selections

DV

Example: DV = 'SPD' OR DV = 'NPD'

STATE

Example: STATE1 = 'California' OR STATE1 = 'Oregon'

RIVER

Example: RIVER CONTAINS 'Columbia' OR RIVER CONTAINS 'Snake'

DV AND RIVER

Example: DV = 'LMV' AND RIVER CONTAINS 'MISSISSIPPI'

APPENDIX D
CATALOG OF DATABASES USED

RESERVOIR NETWORK IDENTIFICATION INFORMATION

Database Name: NETID

Location: Hydrologic Engineering Center, CEWRC-HEC

Contact: Bill Johnson, (916) 756-1104

Description:

This database contains data that identifies the reservoir project and can link it to other databases through a common parameter.

Data Dictionary for NETID:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
CWIS	Civil Works Information System identification number	TEXT	9
NIDID	National Inventory of Dams identification number	TEXT	7
RECID	Recreation identification number	TEXT	9
DV	Corps of Engineers Division office abbreviation	TEXT	3
DS	Corps of Engineers Division office abbreviation	TEXT	3
RESNAME	Official project name	TEXT	65
RIVER	River on which reservoir is located	TEXT	110
COUNTY1	County in which reservoir is located	TEXT	90
STATE1	State in which reservoir is located	TEXT	20
COUNTY2	Second county in which reservoir is located	TEXT	60
STATE2	Second state in which reservoir is located	TEXT	20
ORDERNO	Alphabetical order of reservoir	INTEGER	
ST1_LTRS	Postal state code	TEXT	2
FIPS_ST	Federal Information Processing Standard two-digit state code	TEXT	2
FIPS_CO	Federal Information Processing Standard three-digit county code	TEXT	3
FIPS	Combined five-digit state and county FIPS code	TEXT	5
ZIPCODE	Postal five-digit zip code	TEXT	5
LATDEG	Latitude in degrees, minutes, seconds	REAL	
LONGDEG	Longitude in degrees, minutes, seconds	REAL	
DECLAT	Latitude in degrees, decimal	REAL	
DECLONG	Longitude in degrees, decimal	REAL	
UTMZONE	Universal Transverse Mercator Coordinates zone	TEXT	4

UTMEAST	Universal Transverse Mercator easting	DOUBLE	
UTMNORTH	Universal Transverse Mercator northing	DOUBLE	
YEARCMPL	Year reservoir construction was complete	INTEGER	
AQUIFER	USGS Two-digit Regional Aquifer System number	TEXT	35
HYDUNIT	USGS Eight-digit Hydrologic Unit number	TEXT	8
CLIMDIV	NOAA Four-digit Climate Division number	TEXT	40
CDIVNAME	NOAA Climate Division name	TEXT	21
NEARCITY	A town near the reservoir	TEXT	2
CNGDST1	A Congressional District which includes all or part of the reservoir	TEXT	2
CNGDST2	A Congressional District which includes part of the reservoir	TEXT	2
CNGDST3	A Congressional District which includes part of the reservoir	TEXT	2
CNGDST4	A Congressional District which includes part of the reservoir	TEXT	2
CNGDST5	A Congressional District which includes part of the reservoir	TEXT	2

WATER CONTROL DATA

Database Name: NEWPERT

Contact: Dick DiBuono, (202) 272-8511

Location: Hydrologic Engineering Center, CEWRC-HEC

Description:

Originally developed by Headquarter (CECW-EH) from field surveys for ER 1110-2-240, this database has been updated with more recent data on the official project name and operating and authorized purposes. Also, some data in the original database has been deleted.

Data Dictionary for NEWPERT:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
CWIS	Civil Works Information System identification number	TEXT	9
DV	Corps of Engineers Division office abbreviation	TEXT	3
DS	Corps of Engineers District office abbreviation	TEXT	3
RESNAME	Official project name	TEXT	65
WCM	Completion date of Water Control Manual, month-year	DATE	
WCP	Completion date of Water Control Plan, month-year	DATE	
DRT	Completion date of Drought Contingency Plan, month-year	DATE	
FEAP	Completion date of Flood Emergency Action Plan, month-year	DATE	
YRCOMP	Established year of completion	TEXT	4
DAMTYPE	Type of structure: E, earth; R, rockfill; B, both earth and rockfill; C, gravity and rockfill; A, arch; O, other	TEXT	1
OPURLIST	Operating purposes	TEXT	50
APURLIST	Authorized purposes	TEXT	50
WSCONTR	Storage under Water Supply contracts, acre-feet	DOUBLE	
TSTOR	Total reservoir, volume, acre-feet	DOUBLE	
ASTOR	Total active storage, acre-feet	DOUBLE	
ESTOR	Total exclusive purpose storage, acre-feet	DOUBLE	
MSTOR	Total multiple-purpose storage, acre-feet	DOUBLE	
ISTOR	Total inactive storage, acre-feet	DOUBLE	
DSTOR	Total dead storage, acre-feet	DOUBLE	
SSTOR	Total surcharge storage, acre-feet	DOUBLE	
TOPELEV	Top of dam elevation, feet	DOUBLE	

PMFELEV	Probable Maximum Flood elevation, feet	DOUBLE	
EUELEV	Upper elevation, exclusive purpose storage, feet NGVD	DOUBLE	
ELELEV	Lower elevation, exclusive purpose storage, feet NGVD	DOUBLE	
XAREA	Total reservoir surface area, acres	INTEGER	
EUAREA	Upper area, exclusive purpose storage, acres	INTEGER	
ELAREA	Lower area, exclusive purpose storage, acres	INTEGER	
MUAREA	Upper area, multiple-purpose storage, acres	INTEGER	
MLAREA	Lower area, multiple-purpose storage, acres	INTEGER	
MUELEV	Upper elevation, multiple-purpose storage, feet NGVD	DOUBLE	
MLELEV	Lower elevation, multiple-purpose storage, feet NGVD	DOUBLE	
TWMAX	Upper limit tailwater elevation, feet NGVD	DOUBLE	
TWMIN	Lower limit tailwater elevation, feet NGVD	DOUBLE	
RUNOFF	Average annual runoff, 1000 acre-feet	DOUBLE	
HYDHEAD	Hydraulic head, feet	DOUBLE	
XUNITS	Number of hydroelectric generating units	INTEGER	
QGENX	Generation flow capacity, 1000 cfs	DOUBLE	
MWGENX	Generation megawatt capacity, mw	DOUBLE	
QOUTLET	Regulated outlet capacity, 1000 cfs	DOUBLE	
QSPILL	Spillway capacity, 1000 cfs	INTEGER	
XGATES	Number of Spillway gates	INTEGER	
GDRAIN	Gross drainage area, sq. mi.	INTEGER	
LDRAIN	Local drainage area, sq. mi.	INTEGER	
XPREC	Annual precipitation, inches	DOUBLE	
Q100	100-year flood flow, 1000 cfs	DOUBLE	
QDGNF	Spillway design flow, 1000 cfs	DOUBLE	
QPMF	Probable Maximum Flood flow, 1000 cfs	DOUBLE	
XPERCEN	Percentage of precipitation on gross drainage area which results in annual runoff	DOUBLE	
XPOOL		TEXT	1
ANNEVAP	Average annual reservoir evaporation, inches	INTEGER	

AUTHORIZED AND OPERATING PURPOSES OF CORPS OF ENGINEERS RESERVOIRS (LEGAUTH)

Database Names: AUTHPUR, PUBLAW, NOTES

Location: Hydrologic Engineering Center, CEWRC-HEC

Contact: Bill Johnson, (916) 756-1104

Description:

There are three parts to this database. AUTHPUR contains data on the authorized and operating purposes of Corps of Engineers reservoirs (including locks and dams) and the authorizing public laws and reference documents. PUBLAW identifies each public law cited. And NOTES contains reference notes pertaining to the purposes and their authorization.

Data Dictionary for AUTHPUR:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
CWIS	Civil Work Information System identification number	TEXT	9
DV	Corps of Engineers Division office abbreviation	TEXT	3
DS	Corps of Engineers District office abbreviation	TEXT	3
RESNAME	Official project name	TEXT	65
OPUR	Purposes for which the reservoir is operated	TEXT	8
APUR	Purposes for which the reservoir is authorized	TEXT	8
ALAW	Authorizing public laws	TEXT	90
ASEC	Section of authorizing laws	TEXT	40
ADOC	Documents cited in authorizing public laws	TEXT	80
ANOTE	Excerpt from laws or documents	NOTE	

Data Dictionary for PUBLAW:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
PLNUM	Public Law number	TEXT	12
PLDATE	Public Law date	DATE	
PLNAME	Public Law name	TEXT	150
PLSTAT	Public Law statute	TEXT	40
LCODE	Code which distinguishes between used and unused Public Law	TEXT	6

Data Dictionary for NOTES:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
CWIS	Civil Works Information System identification number	TEXT	9
DV	Corps of Engineers Division office abbreviation	TEXT	3
DS	Corps of Engineers District office abbreviation	TEXT	3
RESNAME	Official project name	TEXT	65
NOTE1	Note 1 on project purposes and their authorization	NOTE	
NOTE2	Note 2 on project purposes and their authorization	NOTE	
NOTE3	Note 3 on project purposes and their authorization	NOTE	
NOTE4	Note 4 on project purposes and their authorization	NOTE	
NOTE5	Note 5 on project purposes and their authorization	NOTE	
NOTE6	Note 6 on project purposes and their authorization	NOTE	

NATIONAL INVENTORY OF DAMS - CORPS OF ENGINEERS DAMS

Database Name: COEDAM

Location: Office Chief of Engineers, Engineering Division, CECW-EP

Contact: Wayne King, (202) 272-8689

Description:

COEDAM is a subset of the National Inventory of Dams database and only includes Corps of Engineers dams. Since the national inventory was completed additional data have been added to the database and other data updated.

Data Dictionary for COEDAM:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
ID	National Inventory of Dam	TEXT	7
CWIS	Civil Works Information System identification number	TEXT	9
DIV	Corps of Engineers Division office abbreviation	TEXT	3
DST	Corps of Engineers District office abbreviation	TEXT	3
OWNER	Owner of Dam	TEXT	30
STATE	Alpha State Code	TEXT	2
COUNTY	Preliminary County Name	TEXT	25
DAMNAME	Dam Name	TEXT	35
LAKE	Lake or Reservoir Name	TEXT	35
RIVER	River-stream-trib.	TEXT	110
PURPOSE	Major purposes of dam	TEXT	7
TYPEX	Design types	TEXT	6
HYDHGT	Hydraulic height, feet	INTEGER	
CREST	Crest length, feet	INTEGER	
MAXCAP	Maximum storage, acre-feet	INTEGER	
LAT	Latitude, degrees, minutes, seconds	TEXT	7
LONG	Longitude, degrees, minutes, seconds	TEXT	8
SEISMIC	Seismic zone	TEXT	1
LASTINSP	Date of last inspection	DATE	
NEXTINSP	Date of next inspection	DATE	
YEARCMPL	Year Dam completed	INTEGER	
CATEGORY	Category of Dam	TEXT	10

SUBCAT1	Subcategory 1 of Dam	TEXT	5
SUBCAT2	Subcategory 2 of Dam	TEXT	12
CAT_COMM		TEXT	80
UPDTDATE	Last Modification Date	DATE	
STARTDATE	Design/Construction start date	DATE	
SCHEDCMPL	Scheduled design/const completion date	DATE	
CNGDST1	Two digit number for Congressional District	TEXT	2
REGION	Two digit number for Region Code	TEXT	2
BASIN	Two digit number for Basin Code	TEXT	2
NEARCITY	Nearest Downstream city-town-village	TEXT	27
DISTANCE	Distance from the Dam to the nearest downstream city-town-village, miles	INTEGER	
POPULATION	Population of the city-town-village	INTEGER	
STRHGT	Structural height of the Dam, feet (the vertical distance from the lowest point of foundation surface to the top of dam.)	INTEGER	
NORCAP	Acre feet of storage, acre-feet	INTEGER	
HAZARDCODE	Hazard potential	TEXT	1
SPILLTYPE	Type of spillway	TEXT	1
SPILLWID	Width of spillway, feet	INTEGER	
SPILLDIS	Spillway capacity, cfs	INTEGER	
VOLMAT	Volume of Materials in the dam structure, cubic yards	INTEGER	
NUMLOCKS	Existing navigation locks	INTEGER	
ENGR	Organization that engineered the main dam structure	TEXT	24
CONST	Construction Agency	TEXT	24
REMARK1	Memo field		
REMARK2	Memo field		
INSPDATES	Inspection Dates for memo field		
STA2	Secondary state code	TEXT	2
POWINSTALL	Power installed (mw)		
POWPROP	Power proposed (mw)		
LENLOCK	Length of locks	INTEGER	
WIDLOCK	Width of locks	INTEGER	
MISCODE		TEXT	4
COST		DOUBLE	

EAP	TEXT	2
EAP_I	DATE	
EAP_O	DATE	
EAP_N	DATE	
EAP_N1	INTEGER	
EAP_N2	INTEGER	
EAP_E	DATE	
EAP_E1	INTEGER	
EAP_E2	INTEGER	
EAP_COMM	TEXT	80
REL_WELL2	INTEGER	
RELXWELL	INTEGER	
REXXWELL	INTEGER	
DRAIN	INTEGER	
INSTR	TEXT	1
INSTR_MON	INTEGER	
WATER_QUAL	INTEGER	
FED	TEXT	1
FED_POWER	DOUBLE	
FED_PROP	DOUBLE	
NFED	TEXT	1
NFED_POWER	DOUBLE	
NFED_PROP	DOUBLE	
FERCNO	TEXT	10
LINCENSEE	TEXT	23
TOTAL_INSP	INTEGER	
INSP_FREQ	INTEGER	
SURF_AREA	INTEGER	
DRAIN_AREA	DOUBLE	
POC	TEXT	30
PHONE	TEXT	14

HYDROELECTRIC POWER AT CORPS OF ENGINEERS PROJECTS

Database Name: CEHYDRO

Location: Institute for Water Resources, CEWRC-IWR

Contact: Mike Walsh, (713) 355-3087

Description:

This database contains data on the status of hydroelectric facilities at Corps of Engineers projects. All projects with existing facilities, with facilities under construction (as of July 1988), and those projects with potential for the addition of hydroelectric power are included.

Data Dictionary for CEHYDRO:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
UPDAT1	Date when data in database was last updated, month/day/year	TEXT	8
NHSID	National Hydropower Study project identification number	TEXT	10
CEID	Corps National Dam Inventory identification number	TEXT	7
CWIS	Civil Works Information System identification number	TEXT	9
FERCNUM	Federal Energy Regulatory commission identification number	TEXT	6
CENAME	Dam name	TEXT	37
APPLICATION	Name of FERC license applicant	TEXT	30
FILDATE	Filing date for FERC license, month/day/year	TEXT	8
CESTREAM	Name of project stream	TEXT	30
CONGDIST	Congressional district number	TEXT	2
ERC	Electric Reliability Council Region that receives and distributes power	TEXT	5
CELAT	Latitude, degrees, minutes, seconds	TEXT	7
CELONG	Longitude, degrees, minutes, seconds	TEXT	7
QUADSHEE	Name of USGS quad sheet containing the site	TEXT	25
MAPDATE	Date of USGS quad sheet	TEXT	7
MAXSTOR	Maximum water storage behind the dam, acre-feet	DOUBLE	
CEDRAIN	Drainage area above dam, sq. mi.	DOUBLE	
CECOUNTY	County of powerhouse location	TEXT	25
YEARCOM	Year dam completed	TEXT	4
PROJPUR	Project purpose code: I=Irrigation; H=Hydroelectric; C=Flood Control; N=Navigation; S=Water Supply;	TEXT	7

R=Recreation; D=Debris Control; P=Farm Pond; O=Other

CESTATUS	Corps project status code: IS=Identification site; SP=Study Proposed; SA=Authorized for Study; FP=Feasibility Study in Progress; SI=Study Inactive; PA=Project Authorized; DM=GDM in Progress; UC=Under Construction; OP=Project Operation	TEXT	10
CEHEAD	Project net power head, feet	INTEGER	
EXCAP	Existing name plate capacity, kw	DOUBLE	
EXENG	Existing average annual energy generated, mwh	DOUBLE	
ADDCAP	Potential feasible additions of capacity, kw	DOUBLE	
ADDENG	Potential feasible additional energy available, mwh	DOUBLE	
REVCAP	Reversible capacity of plant, kw	DOUBLE	
CAPUC	Capacity under construction, kw	DOUBLE	
CECOM	Additional comments on the project	TEXT	50
CNT	Counter for filing, sorting and accounting	INTEGER	
ISSUEDAT	Date FERC license was issued, month/day/year	TEXT	8
EXPIRDAT	Date FERC license expires, month/day/year	TEXT	8
CELAKE	Name of lake above dam	TEXT	35
CETYPE	Type of dam construction code: RE=Earth; ER=Rockfill; PG=Gravity; CB=Buttress; VA=Arch; MV=Multi-Arch OT=Other	TEXT	1
CREST	Length of dam crest, feet	INTEGER	
STRHGT	Structural height of dam, feet	INTEGER	
YEARFIRS	Year power first online	TEXT	4

NATURAL RESOURCE MANAGEMENT SYSTEM (NRMS)

Database Names: PR_USE, MSA

Location: Office Chief of Engineers, Operations, Construction
and Readiness Division, CECW-ON

Contact: Judy Rice, (202) 272-1796

Description:

The Natural Resource Management System consists of a large number of databases with data on recreational facilities and their use at Corps reservoir projects. The three databases named above are only three such databases and were selected to illustrate the type of data available on recreational use at Corps projects.

Data Dictionary for PR_USE:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
YEAR	Year data collected	TEXT	4
DIV_CODE	Single letter code for Corps Division office	TEXT	1
EROC_CODE	Letter, numeric code for Corps District office	TEXT	2
KEYPROJ	Natural Resource Management System project identification number	TEXT	7
STATE_ABBR	State postal abbreviation	TEXT	2
DIVISION	Corps of Engineers Division office abbreviation	TEXT	4
DISTRICT	Corps of Engineers District office name	TEXT	13
PROJ_NAME	Project name	TEXT	45
JANUARY	January recreation visitor hours of use, vis-hrs	INTEGER	
FEBRUARY	February recreation visitor hours of use, vis-hrs	INTEGER	
MARCH	March recreation visitor hours of use, vis-hrs	INTEGER	
APRIL	April recreation visitor hours of use, vis-hrs	INTEGER	
MAY	May recreation visitor hours of use, vis-hrs	INTEGER	
JUNE	June recreation visitor hours of use, vis-hrs	INTEGER	
JULY	July recreation visitor hours of use, vis-hrs	INTEGER	
AUGUST	August recreation visitor hours of use, vis-hrs	INTEGER	
SEPTEMBER	September recreation visitor hours of use, vis-hrs	INTEGER	
OCTOBER	October recreation visitor hours of use, vis-hrs	INTEGER	
NOVEMBER	November recreation visitor hours of use, vis-hrs	INTEGER	
DECEMBER	December recreation visitor hours of use, vis-hrs	INTEGER	

PICNICKING	Percent of visitors picnicking, %	INTEGER	
CAMPING	Percent of visitors camping, %	INTEGER	
SWIMMING	Percent of visitors swimming, %	INTEGER	
WATER_SKI	Percent of visitors water skiing, %	INTEGER	
BOATING	Percent of visitors boating, %	INTEGER	
SIGHTSEE	Percent of visitors sightseeing, %	INTEGER	
FISHING	Percent of visitors fishing, %	INTEGER	
HUNTING	Percent of visitors hunting, %	INTEGER	
OTHERS	Percent of visitors engaging in other activities, %	INTEGER	
VIS_HOURS	Total annual visitor hours of use of project, vis-hrs	DOUBLE	
UPDATED	Date data was updated	TEXT	1
DISPERSED	Total visitor hours outside developed recreation areas, vis-hrs	DOUBLE	
VISITS	Total number of visits to the project for the report fiscal year	INTEGER	
WINTER	Percent of visitors engaging in winter recreation activities, %	INTEGER	

Data Dictionary for MSA:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
YEAR	Year data collected	TEXT	4
DIV_CODE	Single letter code for Corps Division office	TEXT	1
EROC_CODE	Letter, numeric code for Corps District office	TEXT	2
KEYPROJ	Natural Resources Management System project identification number	TEXT	7
CARD		TEXT	1
STATE_ABBR	State postal abbreviation	TEXT	2
DIVISION	Corps of Engineers Division office abbreviation	TEXT	4
DISTRICT	Corps of Engineers District office abbreviation	TEXT	13
PROJ_NAME	Project name	TEXT	45
MSA	Metropolitan Statistical Area code nearest the project	TEXT	4
CITY_NAME	City name that corresponds to the MSA code	TEXT	20
MET_ST_CD	Two digit state code for the state in which MSA is located	TEXT	2
ROAD_MILES	Road miles MSA boundary to project boundary	INTEGER	

-	MET_POP	MSA population for the last census	INTEGER	
	UPDATED	Date data was updated	TEXT	1

WATER SUPPLY CONTRACTS

Database Name: WSCONT

Location: Office Chief of Engineers, Planning Division, CECW-P

Contact: Ted Hillier (CEWRSC-IWR), (703) 355-2140

Description:

This database contains data on contracts between the Corps of Engineers and non-federal interests for water supply storage at Corps reservoirs.

Data Dictionary for WSCONT:

<u>Field Name</u>	<u>Description</u>	<u>Type</u>	<u>Length</u>
CWIS	Civil Works Information System identification number	TEXT	9
DV	Corps of Engineers Division office abbreviation	TEXT	3
DS	Corps of Engineers District office abbreviation	TEXT	3
RESNAME	Official project name	TEXT	65
ST	State in which project is located	TEXT	2
BLDING	Code indicating whether under construction	TEXT	1
USER_CT	Water supply contractor's name	TEXT	35
PSTRGE	Present water supply contract storage, acre-feet	DOUBLE	
FSTRGE	Future water supply contract storage, acre-feet	DOUBLE	
PINVEST	Present investment, \$1000	DOUBLE	
PINVEST	Future investment, \$1000	DOUBLE	
CONDUIT	Conduit cost, \$1000	DOUBLE	
APPDATE	Date contract approved	DATE	

REPORT DOCUMENTATION PAGE

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